SONY

3-752-284-21(1)

FM Stereo/FM-AM Receiver

Operating Instructions

STR-D2020

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WARNING

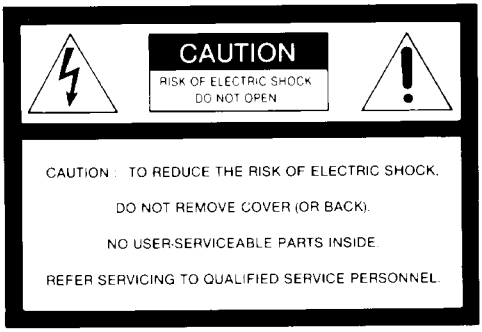
Owner's Record

The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. STR-D2020 Serial No._____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsualted "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Note to CATV system installer
This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

INFORMATION
This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radioand television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna
Relocate the equipment with respect to the receiver
Move the equipment away from the receiver
Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communicaitons Commission helpful:
"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from U.S. Government Printing Office, Washington, DC 20402, Stock No.004-000-00345-4.

For the customers in Canada
This apparatus complies with the Class B limits for radio noise emissions set out in Radio Interference Regulations.

CAUTION:
TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

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Overview

The STR-D2020 is a FM stereo/FM-AM receiver with a built-in digital signal processor.
You can enjoy various audio and video program sources with this unit.

Digital surround processor
- The STR-D2020 electronically reproduces the reflected sound (early reflection) and reverberative sound (reverberation) by using its digital signal processor, and allows you to obtain the acoustics of various situations.
- DOLBY SURROUND PRO LOGIC * decoder reproduces the specially encoded surround sound of Dolby surround video programs.

* Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licenced under one or more of the following patents: U.S. numbers 3,632,886, 3,746,792 and 3,959,590; Canadian numbers 1,004,603 and 1,037,877. "DOLBY" and the double-D symbol ⊡⊡ are trademarks of Dolby Laboratories Licensing Corporation.

Digital parametric equalizer
- You can enjoy audio program sources with appropriate equalization curve by controlling the level of the desired 3 frequency bands.

Digital Dynamic Sound (DDS)
- You can use the compressor or expander to control the dynamics:
  — the compressor compresses the dynamic range of the program source, so you can enjoy dynamic sound at small output levels.
  — the expander eliminates undesired noise.

Sound field
- 10 recommended sound field programs (combination of surround, parametric equalizer, and digital dynamic sound settings) are preset in the factory for easy use. You can also store up to 10 settings you created in the memory.
- Combined use of the sound field programs and the preset stations allow you to enjoy broadcast listening immediately with the memorized sound field settings.

TV/VCR control center
- You can control up to three VCRs or Laser disc players and a monitor TV with this unit.
- You can enjoy TV or CATV programs with FM simulcast sounds.
- You can add sounds from various audio program sources to video tapes during editing.

Quartz-locked digital synthesizer tuner
- You can store up to 30 radio broadcast stations in the unit.
- Index tuning system allows you to categorize the stations by kinds of music, etc. and tune in a station quickly.

High-power amplifier with a built-in D/A converter
- The built-in D/A converter allows you to directly connect digital audio equipment with optical/coaxial digital outputs.
- Independent 2-channel amplifier is built-in for the rear surround speakers.

Dual room link control (DRLC)
- The DRLC function allows you to link a second room to your main or primary listening room. You can enjoy listening to either the same program source being played in the main room or a different program source in the second room.

Programmable system commander RM-P301
- The supplied remote commander can "learn" the various functions of other infrared type remote commanders.

Precautions

On safety
- Operate the unit only on 120 V AC, 60 Hz.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for an extended period of time. To disconnect the cord, pull it out by grasping the plug. Never pull the cord itself.
- One blade of the plug is wider than the other for the purpose of safety and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.

On operation
Before making program source connections, be sure to unplug the unit.

On cleaning the cabinet
Clean the cabinet, panel and controls with a soft cloth lightly moistened with mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvent such as alcohol or benzine.

For the customers in the U.S.A.
For detailed safety precautions, see the "IMPORTANT SAFEGUARDS" leaflet.

If you have any question or problem concerning your unit, please consult your nearest Sony dealer.

Installing

Installing the Unit

- **To prevent internal heat build-up in the unit**
  Place the unit in a location with adequate air circulation.

- **Do not install the unit:**
  — near heat sources such as radiator or air ducts.
  — in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

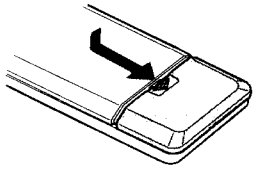
- **Do not place anything on top of the cabinet.**
  The top ventilation holes must be unobstructed for the proper operation of the unit and to prolong the life of its components.

- **Do not throw away the carton and packing material.**
  It will be an ideal container when transporting the unit.

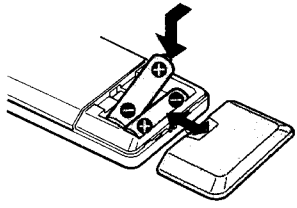
Loading the Remote Commander with the Batteries

Before operating remote commander, install the batteries as shown.

1



2 Two size AA (R6) batteries



To avoid damage caused by battery leakage and corrosion
When the commander will not be used for a long time, remove the batteries.

Battery life
Normal operation can be expected about half a year using Sony SUM-3(NS), and a year using Sony AM-3(NW) alkaline batteries. When the batteries are run down, the remote commander will not operate the unit. In this case, replace batteries with new ones.

Changing the AM tuning interval
The AM tuning interval is preset to 10 kHz. To use the receiver where the frequency allocation system is based on the 9 kHz interval, make the following adjustments:

1 Turn on the power and tune in any AM station.
2 Press POWER to turn off the receiver.
3 Press POWER while pressing the PRESET TUNING + button.
  Before pressing POWER, make sure that the DRLC/ POWER indicator is off.

To reset the AM tuning interval, repeat the above steps.

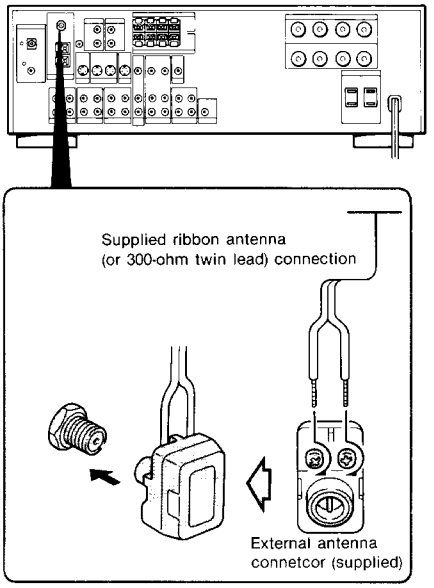
Caution
When the interval is changed, all preset stations which you have stored will be erased. After changing the interval, be sure to preset the stations again.

Connecting the System

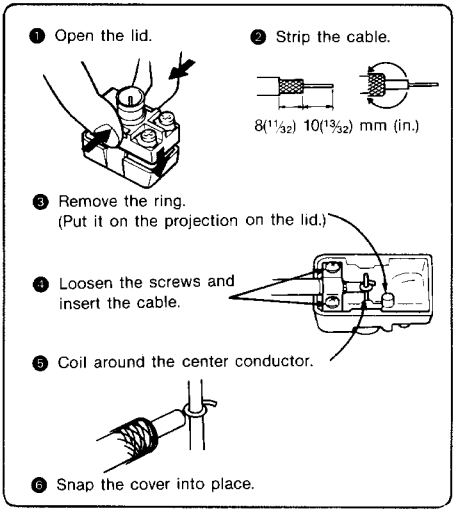
Notes on connecting the system

- Do not connect the power cord to an AC outlet nor press the POWER switch before accomplishing all other connections.
- The cable connectors should be fully inserted into the jacks. Loose connection may cause hum and noise.
- Jacks and plugs of the connecting cord are color-coded as follows:
  Red jacks and plugs: for the right channel of audio signals
  White jacks and plugs: for the left channel of audio signals
  Yellow jacks and plugs: for video signals

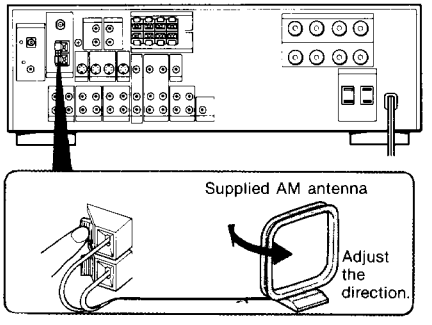
Connecting the FM antenna



75-ohm coaxial cable connection
A 75-ohm coaxial cable is free from external interference, reduces noise pickup, and is the ideal transmission line for most FM installations. A 3C-2V cable is recommended. Connect the 75-ohm coaxial to the supplied antenna connector and connect it to the FM antenna connector.


❶ Open the lid.
❷ Strip the cable.
8(11/32) 10(13/32) mm (in.)
❸ Remove the ring.
(Put it on the projection on the lid.)
❹ Loosen the screws and insert the cable.
❺ Coil around the center conductor.
❻ Snap the cover into place.

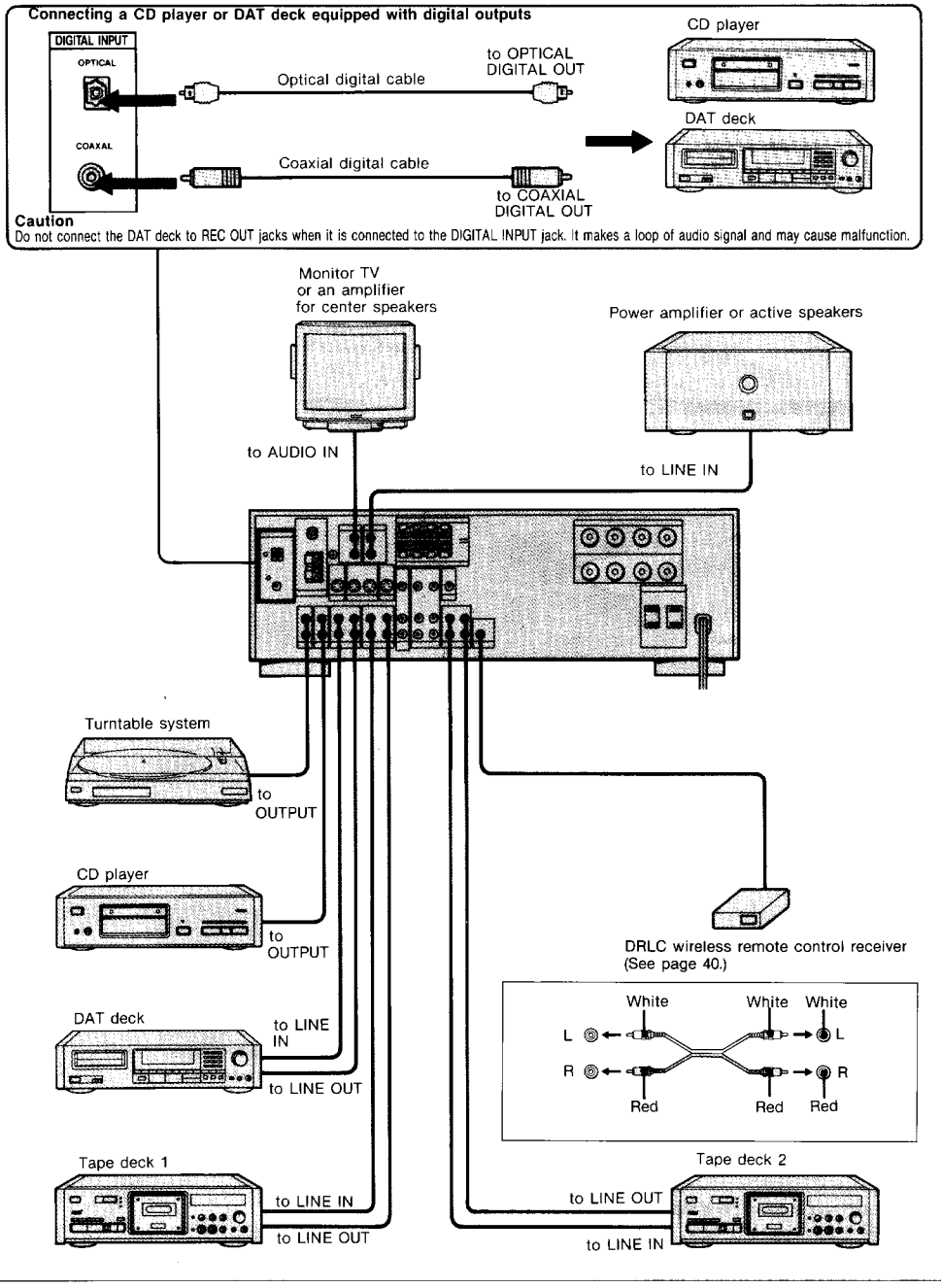
Connecting the AM antenna



For areas with difficult AM reception
In areas with troubled reception, connect a 6- to 15-meter (20- to 50-foot) insulated wire to the AM antenna terminal. Extend this out of doors if possible, keeping the greater portion horizontal. (There is no need to disconnect the supplied antenna.)

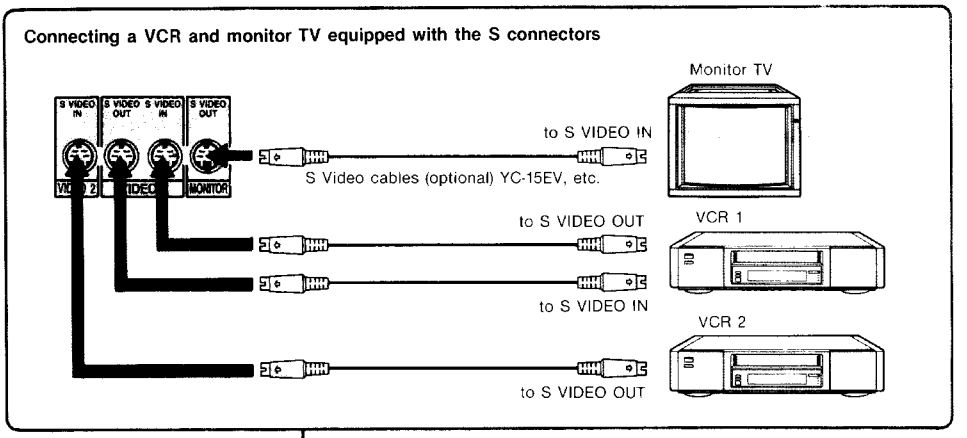
To prevent hum
Connect the ground wire to ANTENNA ground terminal (⏚). When an outdoor antenna is installed, be sure to connect the ground wire for lightning protection.

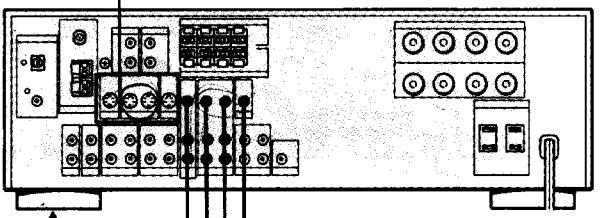
Connecting Audio Equipment

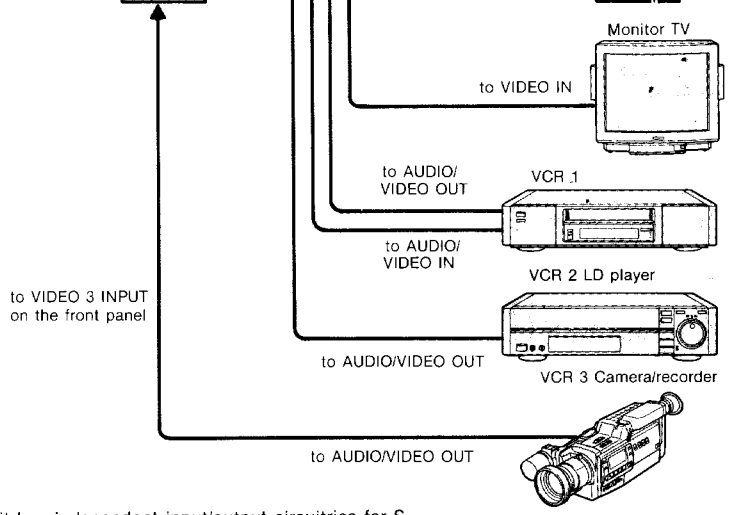


Connecting Video Equipment

Connecting a VCR and monitor TV equipped with the S connectors

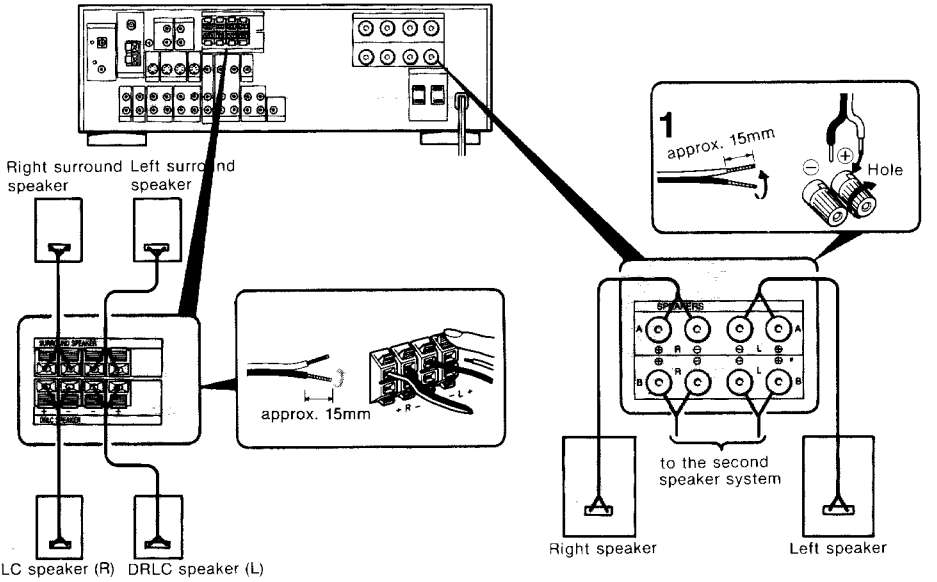






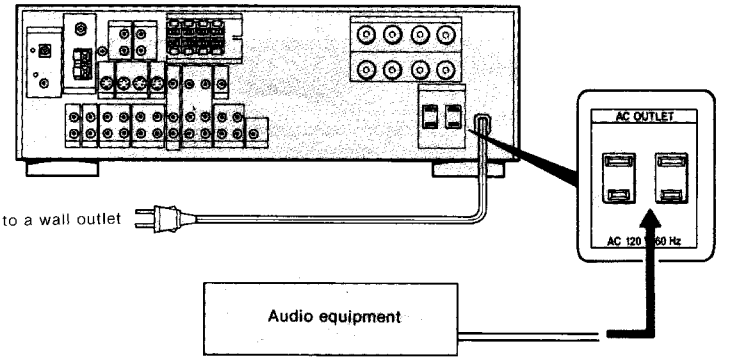
Note
The unit has independent input/output circuitries for S VIDEO and VIDEO IN jacks. Therefore, the video signal input from VIDEO IN does not output for S VIDEO OUT jacks, and vice versa.

Connecting Speaker Systems



Speaker impedance and power capability
This receiver is designed to work best with speakers having nominal impedance from 8 to 16 ohms. Be sure to use a speaker with adequate nominal impedance and power handling capabilities.

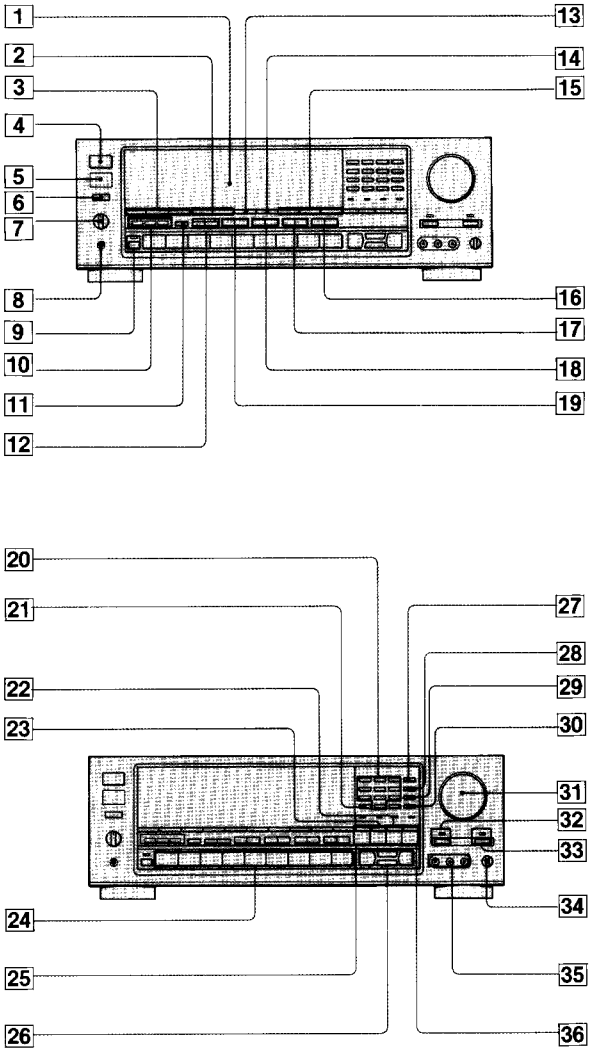
Connecting the AC Power



Caution
Be careful that the total power consumption of each equipment connected to the outlets on the receiver does not exceed 100 watts.
Do not connect electrical home appliance such as an electric iron, fan, or other high-wattage equipment to these outlets.

Parts Identification

Front Panel—Refer to the pages indicated in ○ for details.



1 Display window

2 EQUALIZER function buttons (ON/OFF, FLAT) ㉟

3 SURROUND function buttons (ON/OFF, MODE, PROLOGIC) ㉗, ㉘, ㉙, ㉝

4 POWER switch

5 Remote control sensor

6 DRLC/POWER switch ⑩

7 SPEAKERS selector (A + B, OFF, A, B) ⑯

8 HEADPHONES jack

9 TAPE 2 MONITOR button and indicator ㉔

10 SAMPLING FREQUENCY indicators ⑰

11 DOLBY PRO LOGIC TEST TONE button ㉗

12 EDIT buttons (VIDEO, AUDIO) ㉕

13 DDS (Digital Dynamic Sound) ON/OFF button ㉜

14 S. (sound) FIELD LINK ON/OFF button ㉜

15 TUNER function buttons (INDEX SELECT, FM MODE, FM/AM) ⑨, ㉑

16 PRESET TUNING −/+ buttons ㉑

17 INDEX TUNING −/+ buttons ㉓

18 SOUND FIELD buttons (USER/PRESET, MODE) ㉚, ㉛

19 DISPLAY buttons (GRAPH, CHARA) (graphics, character) ㉒, ㉞

20 Numeric buttons ⑲, ⑳–㉓, ㉚, ㉛

21 MEMORY button ⑳, ㉙, ㉛

22 TUNER TUN/CHARA(tuning/character) button and indicator ⑩, ㉒

23 PARAMETER SUB button and indicator ㉗, ㉘

24 Function selectors ⑰

25 PARAMETER MAIN button and indicator ㉙, ㉝

26 CURSOR MODE operation buttons

27 PGM (program) SET button ㉛

28 RECALL button ㉙, ㉛

29 TUNING DIRECT button ⑱

30 SLOPE button ㉞

31 VOLUME control knob ⑮

32 MUTING button and indicator ⑮

33 AUTO INPUT BAL(balance) button and indicator ㉘

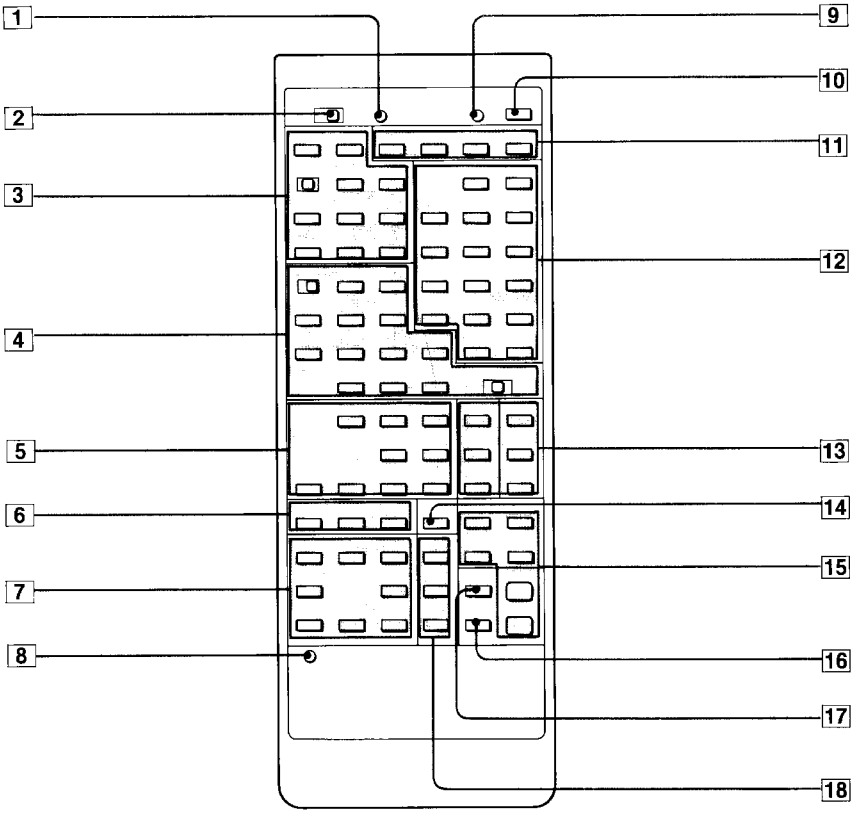
34 BALANCE control ⑮

35 VIDEO 3 INPUT jacks

36 EQUALIZER BAND button and indicator ㉟

Programmable System Commander RM-P301 (supplied)

The RM-P301 can "learn" various functions of other remote commanders which use infrared rays. When the mode selector is set to SONY STD (Sony Standard), button on the RM-P301 can be used to perform the functions below.



1 LEARN indicator

2 Mode selector
SONY STD(standard): To operate the commander on Sony standard
USER STD(standard): To use the learned functions
LEARN: To learn other functions

3 CD player/LDP(Laser Disc Player) operation buttons
CONTINUE: Continuous play (only for CD player)
SHUFFLE: Shuffle play (only for CD player)
CD/LDP selector: Selects CD player or LD player to be played. The combined CD/LD player can be controlled with this selector set to LDP.
PGM: Program play (only for CD player)
D.(disc) SKIP: Disc skip (for a CD player equipped with a multi-disc changer)
▶: Starts play
⏮/⏭: Locates a desired selection.
■: Stops play.
◀◀/▶▶: Manual search (only for LD player)

4 TAPE/DAT/VTR operation buttons
TAPE/VTR selector: Selects TAPE(tape deck) or VTR(VCR) to be controlled.
ANT (antenna) TV/VTR button: Selects the output signal from the antenna terminal on the VCR, either a TV signal or VCR programs.
CH (channel) +/– buttons: Select channel on the VCR.
◀◀/▶▶: Fast winding
■: Stop
◀/▶: Play
⏸: Pause
REV/●REC (recording)/FWD buttons: For reverse recording, press REV and REC together (only for tape deck)
For forward recording, press FWD and REC together.
DECK/VTR selector
DECK A, B, and DAT: Selects A, B or DAT deck.
VTR 1, 2, and 3: Selects VCR type.
1: Betamax VCRs
2: 8mm VCRs
3: VHS VCRs

5 FUNCTION selectors
Select an input source of the receiver.

6 SURROUND buttons
ON/OFF: Turns on/off the surround function.
MODE: Selects the surround mode.
T.(test) TONE: Generates a signal that is sent to each speaker in succession.

7 CURSOR CONTROL buttons
MAIN: Selects PARAMETER MAIN.
SUB: Selects PARAMETER SUB.
EQ (equalizer): Selects EQUALIZER BAND.
MODE: Selets MAIN, SUB, TUN/CHARA or EQUALIZER BAND.
◀/▶/▲/▼: Cursor control buttons

8 RESET button
Press this button and operate again if the equipment works incorrectly.

9 PROGRAM CLEAR button
Clears all programmed signals.

10 SYSTEM OFF button
Turns off the power of the whole system: LDP, VTR, TV and AUDIO.

11 LDP/VTR/TV/AUDIO POWER buttons
Controls the power of each unit.
Note: The VTR POWER button functions only when the TAPE/VTR selector is set to VTR.

12 TV operation buttons
TV/VIDEO: Selects the input signal to the TV set, either a TV broadcast or VCR programs.
VOL (volume) +/– buttons: Control the TV volume.
CH (channel) +/– buttons: Select a preset TV channel.
Program number (1 to 0) and ENTER buttons: Select the TV channel.

13 TUNER operation buttons
INDEX SELECT: Selects an Index name.
INDEX +/– buttons: Selects a next/previous preset station under the same index.
TUNER SHIFT: Selects a memory page (A, B, or C).
PRESET +/– buttons: Selects a higher/lower preset number.

14 EQUALIZER ON/OFF button:
Turn on/off the equalizer.

15 Volume control buttons
CENTER LEVEL +/– buttons: Adjust the level of the center speaker.
REAR LEVEL +/– buttons: Adjust the level of the rear speakers.
MASTER VOL +/– buttons: Adjust the level output from the receiver.

16 MUTING button:
Mutes the output signal.

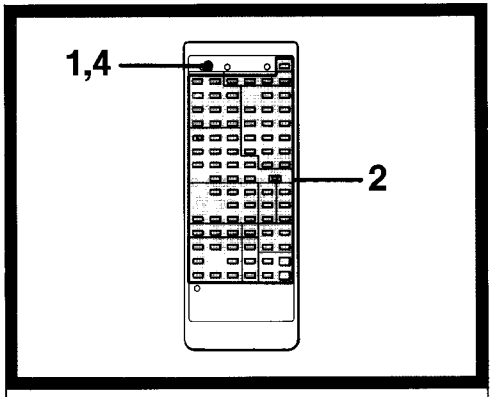
17 DDS/DBFB button
Turn on/off the DDS(Digital Dynamic Sound).
DBFB function is not available with this receiver.

18 S.(sound) FIELD buttons
MODE button: Selects sound field mode.
LINK: Links sound field setting to preset stations.
USER/PRESET: Selects the factory-preset program and the user program.

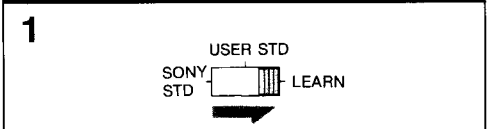
Using the Remote Commander

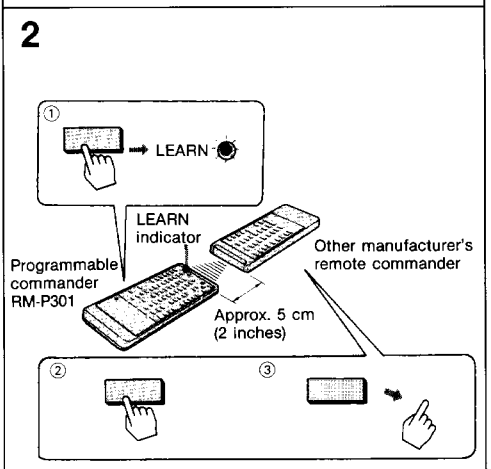
When you manipulate a switch or button on the commander be sure to point the head of the commander toward the remote control sensor on the front of the receiver.
If there is an obstacle between the receiver and the head of the commander, the receiver may not be controlled remotely.

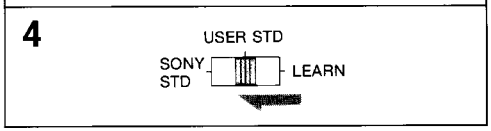
Programming Signals of Other Audio/Video Equipment with Programmable System Commander RM-P301



The RM-P301 learns various functions of other remote commanders emitting infrared rays and allows you to control most of audio and video equipment from a distance.







1 Set the mode selector to LEARN.

2 Program a signal.
① Press and hold the button which shall "learn " the remote-control signal until the LEARN indicator lights up.
② Press and hold the button of other manufacturer's remote commander whose signal is to be learned.
③ Remove your finger(s) from the button(s) after the LEARN indicator goes off.

The two remote commanders must:
- face straight each other.
- be placed at a distance of approx. 5 cm (2 inches).
- not be moved during programming operation.

3 Repeat operation for each button to be programmed.

4 Set the mode selector to USER STD or SONY STD.

After programming
Be sure to test if the equipment really works with the programmed signals.

Number of signals that the commander can learn
It depends on the format of the signal. If you program signals of Sony equipment, approximately 50 signals can be programmed.

If the LEARN indicator flashes or does not go off in step 2-②, ③
The memory capacity is full. This occurs when other signals stronger than the remote-control signals have been stored because the signals were programmed in a noisy environment or the remote commander were placed too for apart from each other.
→ Clear all the signals following the procedure on the right and program again from the beginning under the proper conditions.

Notes on programming
- Remote-control signals of equipment of manufacturers other than Sony can be programmed only when they are compatible with the infrared wireless remote control system. Since the programmable commander can "learn" only the signals output from another remote commander, it cannot control equipment that do not use a remote commander. Also, note that there are some special remote-control signals that cannot be programmed.
- Do not attempt to use the programmable system commander with an air conditioner or other household appliances.

To program a new signal onto a previously programmed button

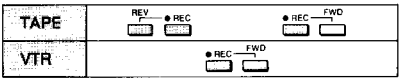
Follow the programming procedure.
The previously programmed signal is cleared and replaced by the new signal.

To clear all programmed signals
1 Set the mode selector to LEARN.
2 Press and hold any button of the programmable area until the LEARN indicator lights up.
3 Press PROGRAM CLEAR until the LEARN indicator flashes and goes off.

Note

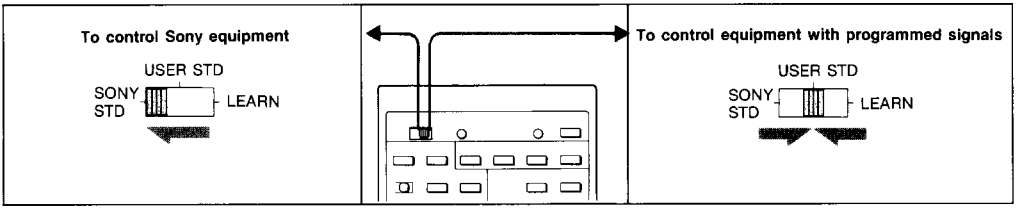
It is not possible to clear the programmed content of just one button.

To program a signal onto the ● REC button in the TAPE or VTR section
It is not possible to operate any equipment with only the ● REC button. To program a signal on the ● REC button, press and hold the following buttons at the same time in step 2-①.



Controlling Equipment

By switching the mode selector as shown below, a single button alternately controls Sony equipment and equipment of another manufacturer.



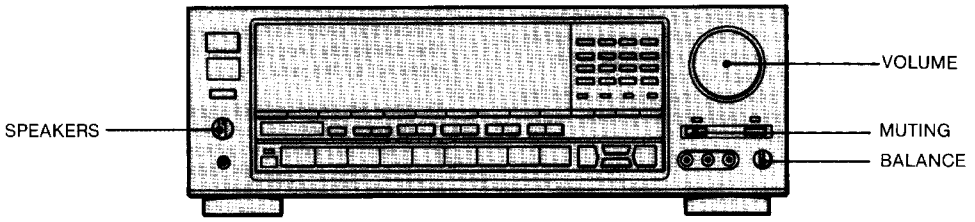
When Sony equipment cannot be remote-controlled
Program the signal in the same way as for equipment from other manufacturers. In this case, even with Sony equipment, set the mode selector to USER STD.

Note on battery
If the LEARN indicator does not light when a button is pressed, the batteries are almost exhausted. When the batteries are exhausted, the remote commander can no longer operate the unit or programming becomes impossible.
If this happens, replace both batteries with new ones. We strongly recommend the use of alkaline batteries.

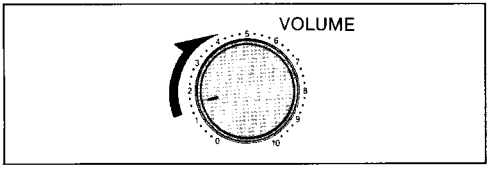
If no signal has been programmed
The programmable commander can control Sony equipment even when the mode selector is set to USER STD.

If the equipment works incorrectly
Press RESET and operate again. The programmed contents of the buttons are not cleared by pressing RESET.

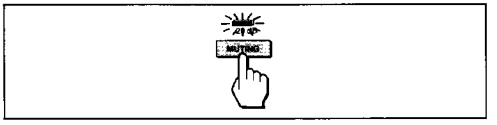
Basic Audio Adjustment



Adjusting Volume

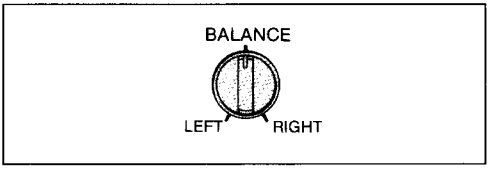


To adjust the output level
Turn VOLUME.



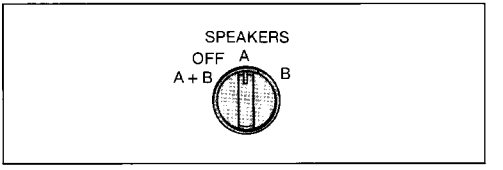
To reduce the sound temporarily to a low level (−20 dB attenuation)
Press MUTING. Press again to restore the previous level.

Adjusting Left and Right Sound Balance



To change the relative output level of the right and left speakers
Adjust BALANCE to correct stereo imaging when the speaker position is not symmetrical.

Selecting the Speaker System

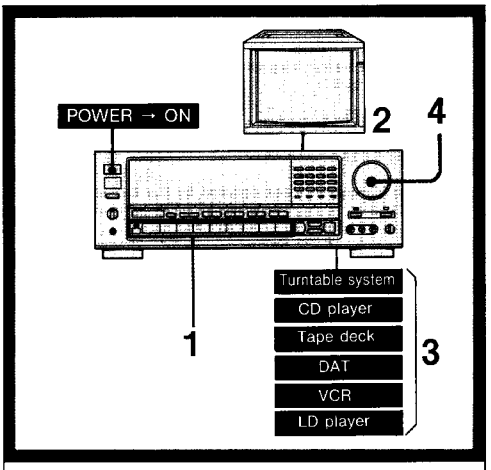


To drive speaker system A: Set SPEAKERS to A.
To drive speaker system B: Set SPEAKERS to B.
To drive both speaker systems A and B: Set SPEAKERS to A + B.
To listen with headphones: Connect headphones to HEADPHONES and set SPEAKERS to OFF.

IMPORTANT

- Speaker systems A and B are series connected. No sound can be heard if the SPEAKERS selector is set to A + B when only one speaker system is connected.
- The signals from the PRE OUT jacks are output regardless of the SPEAKERS selector setting.

Selecting a Program Source



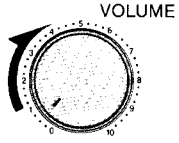
1 **Select the program source.**

	FUNCTION selector to be pressed
Phono record	PHONO
Radio broadcast	TUNER
Compact disc	CD
DAT programs	DAT
Taped programs	TAPE 1, TAPE 2 MONITOR
Video programs	VIDEO 1, VIDEO 2/LD, VIDEO 3
Programs output digital output jack of CD player or DAT deck*	DIGITAL

2 **Turn on the TV when you selected video program sources.**

3 **Start the selected program.**

4 **Adjust the volume.**



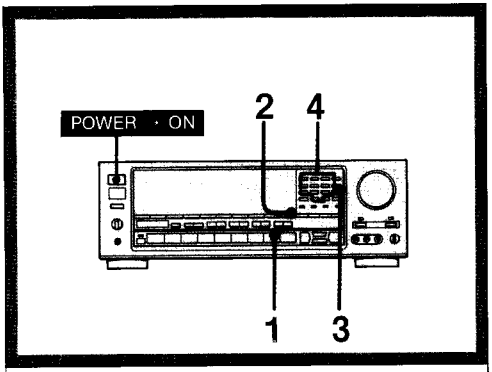
When selecting DIGITAL

* To select DIGITAL, press it until the desired indicator, DIGITAL 1 (OPTICAL) or DIGITAL 2 (COAXIAL) appears in the display. The SAMPLING FREQUENCY indicator will glow according to its sampling frequency when the digital audio signal is input. 48 kHz will glow when the analog audio signal is input.

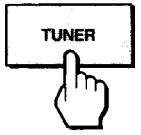
Note

The surround, equalizer, and DDS effects cannot be obtained with the program source connected to the TAPE 2 MONITOR.

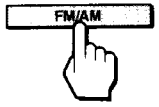
Tuning in a Station Directly - Direct Tuning



1

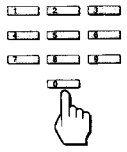


2 Select FM or AM.

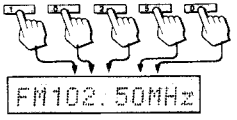


3

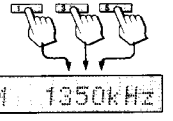
4 Enter the frequency of the desired station.



Example 1: FM 102.50 MHz



Example 2: AM 1350 kHz



To correct the entered frequency
Repeat steps 3 to 4.

For entering AM frequencies, you need not enter the last "0".
However, if you have changed the AM tuning interval to 9 kHz, enter all the digits.

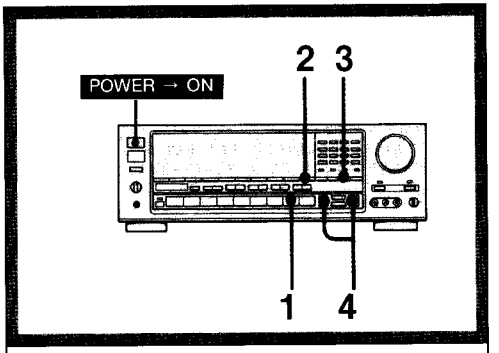
If you enter a frequency not covered by the tuning interval
The entered value is automatically rounded up or down to the closest value covered by the tuning interval.
Tuning interval for direct tuning are the followings:
FM: 50 kHz interval
AM: 10 kHz interval (changeable to the 9 kHz interval)

When the entered number is not in the receivable frequency range
The entered digits (up to 5 digits for FM or up to 3 digits for AM) blink in the frequency display area, and reception does not take place.
If this occurs, press TUNING DIRECT again, and enter the correct frequency (the frequency of the receiver is 87.50 to 108.0 MHz for FM, and 530 to 1710 kHz for AM).

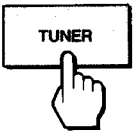
When an FM stereo program is noisy
When the unit receives an FM stereo program, the STEREO indicator goes on in the display window. If the stereo program is noisy, press FM MODE to change the mode over the MONO. This eliminates the stereo effect, but the noise will be greatly reduced.
To return to the stereo mode, press FM MODE again.

Scanning Stations Automatically - Auto Tuning

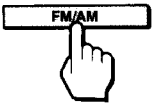
When you do not know the frequency of the station, proceed as follows.



1

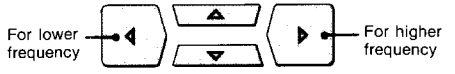


2 Select FM or AM.



3 When the TUNER indicator is lit, skip this step.

4



When a station is received, automatic tuning stops.

5 Repeat step 4 until the desired station is received.

If the automatic scan stops frequently

You can select the signal level to receive, so that the scan stops only at the stations with strong signal.

To select the signal level:

1 Press TUN/CHARA, so that its indicator lights.

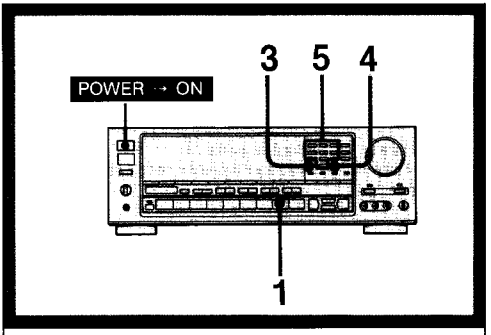
2 Press △, so that HIGH indicator lights.

To receive lower signals again, press ▽.

HIGH indicator disappears, and the scan stops at all receivable stations.

Presetting Stations

A total of 30 FM/AM stations (10 stations on each memory page) can be memorized in any desired sequence.



1

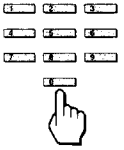
2 **Tune in the desired station.**
(See "Auto tuning" or "Direct Tuning".)

3

MEMORY indicator apprears for a few seconds.

4 **While the MEMORY indicator is on, select the memory page (A, B or C).**

5 **While the MEMORY indicator is on, press the desired number.**



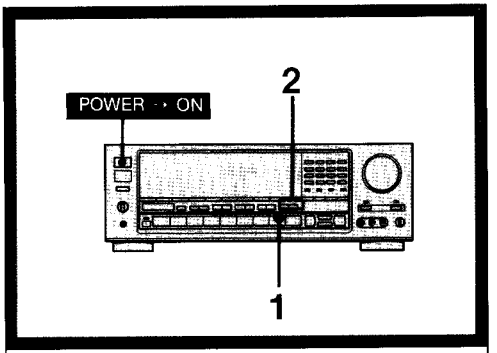
Repeat above steps for presetting other desired stations.

Replacing a preset station
Preset another station on the number of the station to be replaced. The previously preset station will be erased.

Memorizing FM mode
The FM MODE is memorized in the station presetting.
In step 2, select the STEREO or MONO with the FM MODE, if necessary.

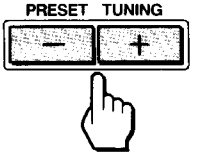
Tuning in Preset Stations - Preset Tuning

Scanning preset stations



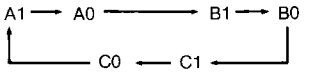
1

2 Select the desired station.

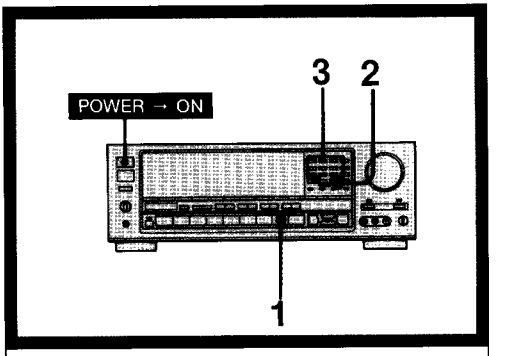


When you press +, the preset station is received sequentially in the direction of the arrow.

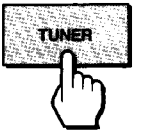
When you press –, the preset station is received sequentially in the reverse direction.



Tuning in preset stations directly

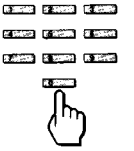


1



2 Select the memory page (A, B or C).

3

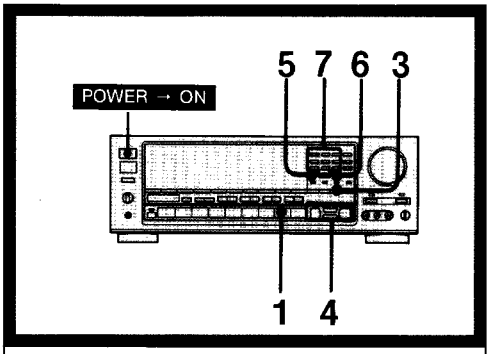


IMPORTANT

The memorized station is maintained for approximately one month even if the power cord is disconnected from the AC power source. If they are erased, store the stations again.

Labelling the Preset Stations - Index Input

You can divide preset stations under index names you create (up to 5 characters). If you want to categorize the preset stations by kinds of music, for example, create indexes, such as ROCK, JAZZ, etc.

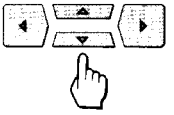


1

2 **Tune in the desired station with Direct, Auto, or Preset Tuning.**

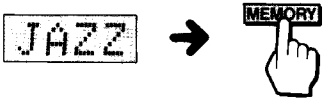
3

4 **Create an index name.**



To select a letter or a number, press △ or ▽.
To change the position, press ◁ or ▷.

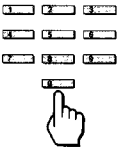
5 **While the index name appears, press MEMORY.**



The MEMORY indicator appears.

6 **While the MEMORY indicator is on, select memory page (A, B, or C).**

7 **While the MEMORY indicator is on, press the desired number.**



If you want to assign the same index name to several stations
Repeat steps 5 to 7.

To correct a previously memorized index
1 Press TUN/CHARA twice so that all the characters in the index name flashes.
Each time you press TUN/CHARA, the display changes as follows:

Frequency of the tuned station ←
↓
One character in the index name flashes.
↓
All characters in the index name flashes.

2 Press △ or ▽ to call up previously memorized index names.
3 Press ◁ or ▷ to move cursor to the desired character.
4 Select the character with △ or ▽.
5 Repeat steps 5 to 7 above.
To resume the normal mode, press TUN/CHARA again.

Each station can be stored under only one index name
If you store an already categorized station under any other index name, only the last index name will be valid.

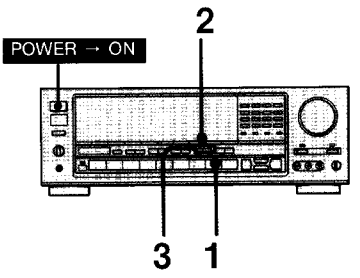
To memorize 0 and O
Because 0 and O appear identical in the display, you need to remember what you set each character to.

To display the frequency and index name of preset stations
Each time you press DISPLAY CHARA, frequency or index name of preset station is alternately appears.

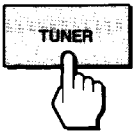
Usable letters and symbols

!→#←%&'( )* +,−./ 0123456789:;< = >?↑ABCDE FGHIJKLMNOPQRSTUVWXYZ[\]Π_↓abcdefghijklm nopqrstuvwxyz

Selecting a Station from among the Preset Stations Having the Same Index - Index Tuning

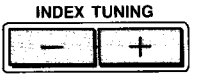


1



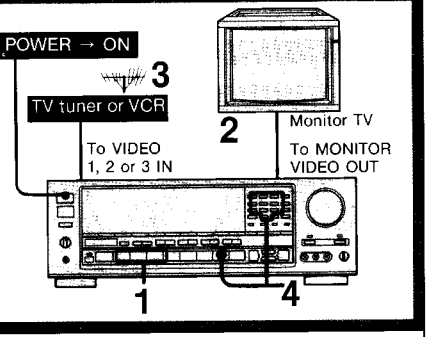
2 Select the index name.

3 Select the desired station.



When you want to tune in a station memorized under a different index name, press INDEX SELECT as many times until the desired index name appears.

Receiving FM Simulcast TV Programs

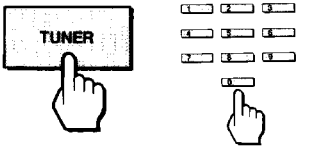


1 Select VIDEO 1, VIDEO 2/LD, or VIDEO 3, according to video inputs connected to an equipment to which the VHF antenna is connected.

2 Turn on the monitor TV.

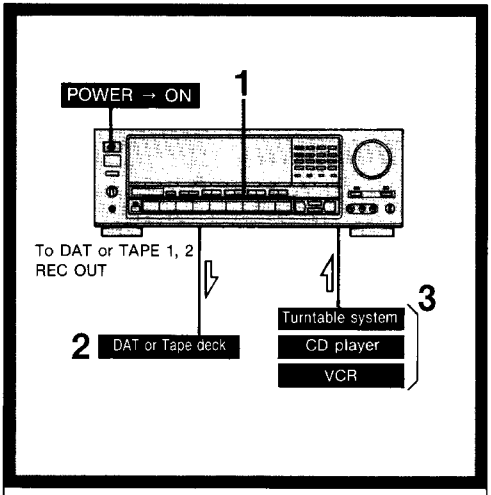
3 Press the desired program on the TV tuner or the VCR.

4 Select TUNER and tune in the FM simulcast TV program on the receiver.



Audio Recording

Recording on an Audio Tape Deck or DAT Deck

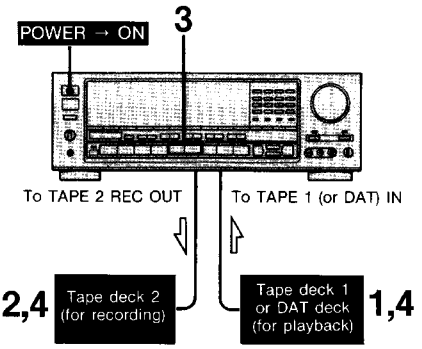


1 **Select the desired program source with the FUNCTION selectors.**
For an FM/AM broadcast, tune in the desired station.

2 **Set the tape (DAT) deck in the recording mode.**

3 **Start the selected program source.**

Tape Dubbing



1 **Insert the recorded tape into tape deck 1 (or the DAT deck).**

2 **Insert a blank tape into tape deck 2 and adjust the recording level.**

3 **Press TAPE 1 or DAT to select the deck for playback.**

4 **Start the playback of the tape (or the DAT) in the tape deck 1 (or the DAT deck), and set tape deck 2 in the recording mode.**
Dubbing will start.

Notes on recording
- Use TAPE 2 REC OUT for the recording with the surround, equalizer, and DDS effects.
- For other OUT jacks, the settings of the surround, equalizer, and DDS effects do not have any effect on recording.

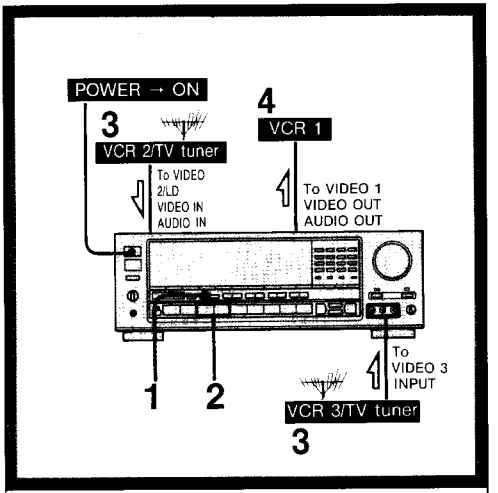
Monitoring the recorded sound
If you have connected a tape deck having separate record and playback heads to the TAPE jacks, you can monitor the recording results. While recording or dubbing, press the TAPE 2 MONITOR button. To listen to the source sound again, press the button again.

Note on tape dubbing
Tape dubbing is possible only in the following directions:

From (playback side)	To (Recording side)	FUNCTION selector to be pressed
Tape deck conneted to TAPE 1 IN	Tape deck connected to TAPE 2 REC OUT	TAPE 1
	DAT deck connected to DAT REC OUT	
DAT deck connected to DAT IN	Tape deck connected to TAPE 1 or 2 REC OUT	DAT

Video Tape Editing

Preparation
If the AUDIO indicator is lit in the display window, press the EDIT AUDIO button to make the indicator go off.



1 **Press EDIT VIDEO to select the playback-side VCR.**
2 ▷ 1 or 3 ▷ 1 appears in the VIDEO EDIT display area.
2 ▷ 1: for VCR 2
3 ▷ 1: for VCR 3

2 **Press VIDEO 2/LD or VIDEO 3 to select the video signal to monitor on the monitor TV.**
VIDEO 2/LD: for VCR 2
VIDEO 3: for VCR 3

3 **Set the playback-side VCR to the playback mode.**

4 **Set VCR 1 to the recoridng mode.**
Editing will begin.

To switch the playback-side VCR during editing
Press EDIT VIDEO. Each time you press the button, the playback-side VCR switches from VCR 2 or 3 to VCR 3 or 2.

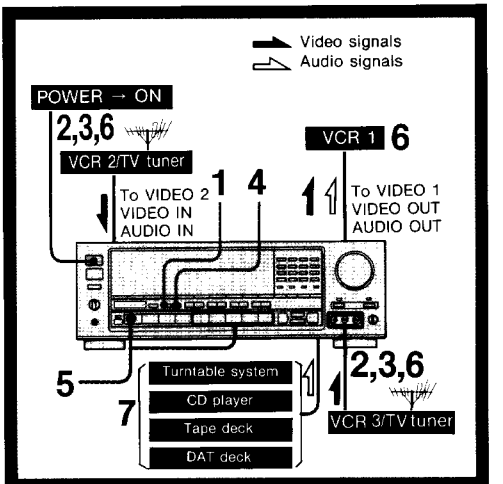
To view the other video source(s) on the monitor TV during editing
Press the appropriate FUNCTION selector, VIDEO 1, VIDEO 2/LD, or VIDEO 3.

Listening to an audio program during video tape editing
1 Press the appropriate FUNCTION selector.
2 Start the selected audio program source.

Note
The surround, equalized, and DDS function do not have any effect for VIDEO 1 AUDIO OUT jacks.

Adding New Sound to a Video Tape during Video Editing

During video tape editing, you can add the desired sound on the recording-side video tape from various audio program sources.



1 **Press EDIT VIDEO to select the playback-side VCR.**
2 ▷ 1 or 3 ▷ 1 will appear in the VIDEO EDIT display area.
2 ▷ 1: for VCR 2
3 ▷ 1: for VCR 3

2 **Insert a recorded video tape into the playback-side VCR and set the VCR to the playback mode.**

3 **At the point where audio dubbing is to start, press the pause button on the playback-side VCR.**

4 **Press EDIT AUDIO.**
AUDIO indicator appears.

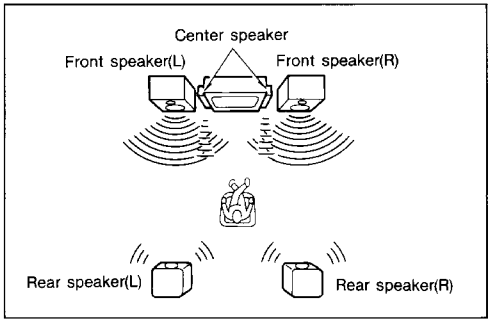
5 **Select the audio program source with FUNCTION selectors.**

6 **Release the pause mode of the playback-side VCR and set VCR 1 to the recording mode.**

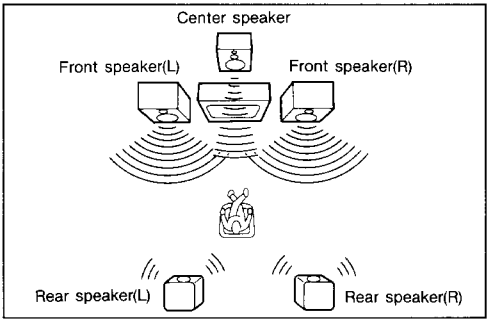
7 **Start the selected audio program source.**
Audio dubbing will start.

Placement of Speakers for Dolby Surround Mode

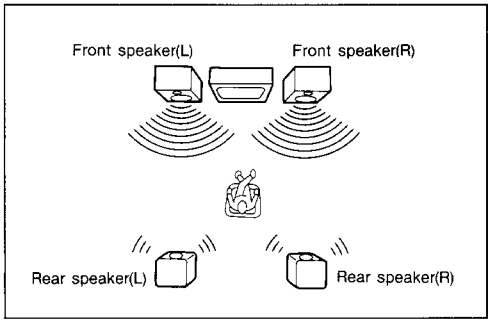
The STR-D2020 incorporates a decoder which reproduces the specially encoded surround sound of Dolby surround video programs. In the Dolby surround mode, select the speaker operation mode according to your speaker system.



NORMAL mode
Select this mode if you use a small center speaker. The bass sound of the center channel is output from the front speakers, as a small speaker cannot produce enough bass.

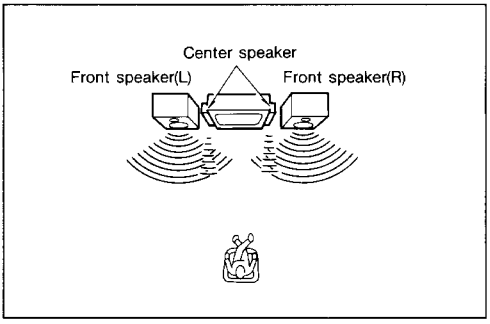


WIDE mode
Select this mode if you use a medium to big center speaker.



PHANTOM mode
Select this mode when you play back a Dolby surround program source without using a center speaker.
The sound of the center channel is output from the front (L and R) speakers.

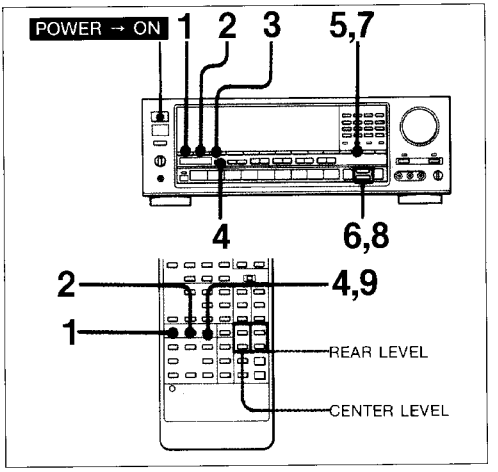
CENTER OFF mode
Select this mode only when you adjust manually the input balance in Dolby surround mode (refer to page 28).



3CH. (channel) LOGIC mode
Select this mode when you play back a Dolby surround program source only with the front and center speakers.
The sound of the rear channel is output from the front (L and R) speakers.

Adjusting the Speaker Volume

To enjoy the surround sound to the maximum on playing any program sources, adjust the front, rear, and center (if connected) speakers to the same volume level. The adjustment must be done with a test tone in the DOLBY SURROUND mode, but the level once adjusted can be used for all surround modes.



* On the remote commander, you can adjust the volume level of the center speaker or the rear speakers with CENTER LEVEL +/− or REAR LEVEL +/−, instead of proceeding with steps 5, 6, 7, 8.

You can adjust the volume level from your listening position by using the remote commander.

1 **Press SURROUND ON/OFF to ON.**

2 **Press SURROUND MODE until DOLBY SURROUND indicator is in square on the display.**
In other surround modes, a test tone is not output from the center speaker.

3 **Press PROLOGIC to select NORMAL, WIDE, PHANTOM or 3CH. LOGIC, depending on your speaker system (refer to page 26).**
The test tone will not be output from the rear speakers when you select 3CH. LOGIC.

4 **Press T.TONE on the remote commender.**
If you use no center speakers, go to step 7.

5* **Press PARAMETER SUB until "Cent. Level" appears in the display.**

6* **Press △ or ▽ to adjust the volume level of the center speaker so that it is the same as the front speakers.**

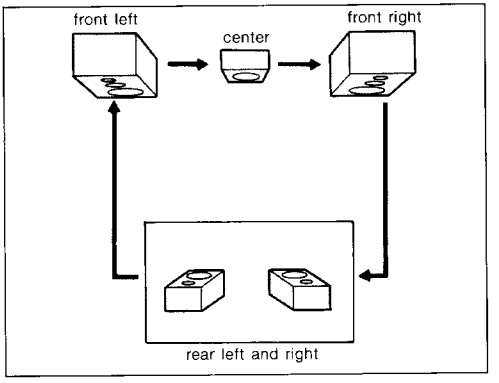
7* **Press PARAMETER SUB until "Rear Level" appears in the display.**

8* **Press △ or ▽ to adjust the volume level of rear speakers so that it is the same as the front speakers.**

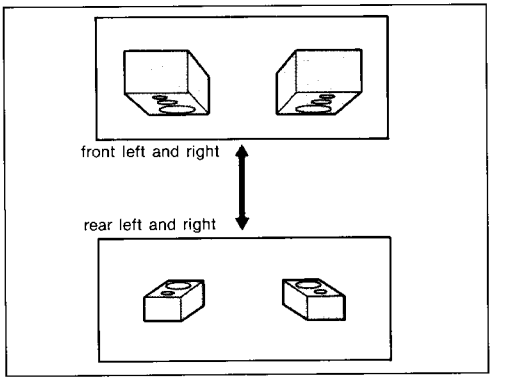
9 **Press T.TONE again to turn off the test tone.**

Sequence of the test tone

In a system with a center speaker:
The test tone will be output automatically from the front L, center, front R, and the rear speakers ("S"-surround) in succession.



In a system without a center speaker:
The test tone will be output automatically from the front speakers and rear speakers alternatively.

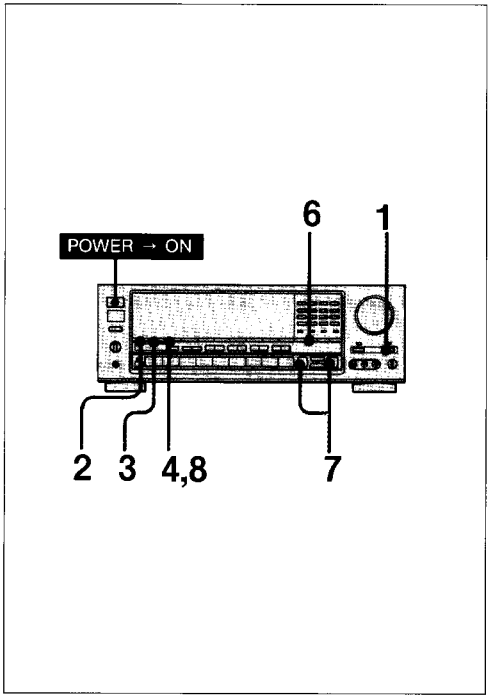


Adjusting the Input Level and Input Balance (for Dolby Surround Mode)

The STR-D2020 incorporates automatic adjustment circuitry of input balance which reproduces the best surround effect. This circuitry allows you to skip the adjustment the input balance when playing back a Dolby surround processed video tape or laser disc. To function this automatic adjustment circuitry effectively, we recommend to perform the following procedure during the playback of monaural sound.
You can also adjust the input balance manually while listening to the actual monaural sound.

To function the automatic adjustment of the input balance
Make sure that the indicator of AUTO INPUT BAL is on. The input balance is adjusted automatically, regardless of the manual setting.

To adjust the input balance manually



1 **Press AUTO INPUT BAL so that its indicator is off*.**

2 **Press SURROUND ON/OFF to ON.**

3 **Press SURROUND MODE until DOLBY SURROUND indicator is in square on the display.**

4 **Press PROLOGIC until CENTER OFF appears in the display.**

5 **Play back the program source (refer to page 17).**

6 **Press PARAMETER SUB until "Bal." appears in the display.**

7 **Adjust the input balance by pressing ◁ or ▷, so that the audio levels from the right and left speakers are minimized during dialogue (monaural).**

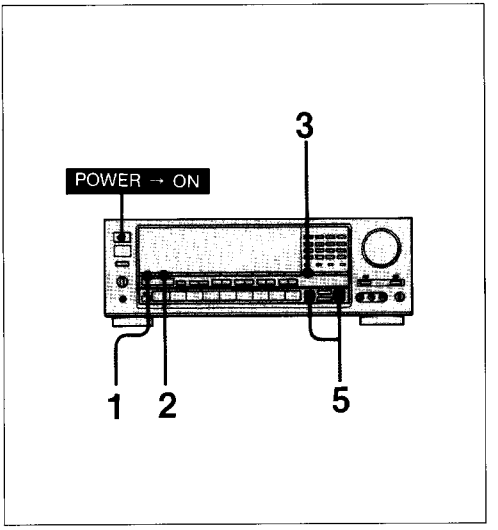
8 **Press PROLOGIC to resume the Pro Logic Mode selected on page 26.**

Note
* If this indicator is on, "auto!" appears after you finish adjusting the parameter of the input balance.

Even for video software which does not carry the DOLBY STEREO or DOLBY SURROUND mark
Some commercially available software may have Dolby surround processed sound tracks even though it is not so indicated on the package.

Adjusting the Delay Time of the Rear Speakers (for Dolby Surround Mode)

The delay time is a time between the surround sound from the front and that from rear speakers. The delay time is adjustable from 15.0 ms to 30.0 ms.



1 **Press SURROUND ON/OFF to ON.**

2 **Press SURROUND MODE until DOLBY SURROUND indicator is in square on the display.**

3 **Press PARAMETER MAIN until "Delay Time" appears in the display.**

4 **Play back the program source (refer to page 17).**

5 **Adjust the delay time for the rear speakers by pressing ◁ or ▷.**

Note
The delay time for the rear speaker can be adjusted even in the 3CH. LOGIC mode.

Enjoying the Factory-preset Digital Sound Effects

Understanding the Digital Sound Effects

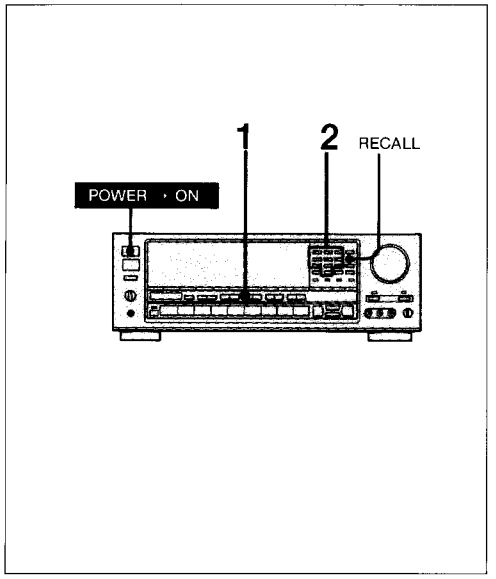
The STR-D2020 incorporates digital signal processing circuitry which consists of a digital surround processor, a digital parametric equalizer, and a digital dynamic sound (DDS) controller.

- The digital surround processor electronically reproduces the acoustics of various listening situations.
- The digital parametric equalizer controls the output level of specific frequencies to finely adjust the frequency responses.
- The digital dynamic sound (DDS) controller compresses or expands the dynamic range of the program source.

These three digital sound effects allow you to create the optimum sound quality and sound atmosphere in your room.

Selecting the Factory-preset Sound Field Program

Ten recommended sound field programs (combination of settings of the surround, parametric equalizer, and digital dynamic sound) have been preset in the factory. Since these programs are appropriate for the most types of music and listening situations, you can enjoy the digital sound effects by just selecting the sound field programs according to the program source.
You can also create a new sound field to your taste by setting each parameter. (Refer to "Making most of the digital sound effects" on next page.)



1 **Press USER/PRESET so that PRESET appears in the display window.**

2 **Press the numeric button so that the indicator of the desired sound field program appears in the display. To use the numeric button in tuner mode, first press RECALL button.**

Preset number	Applications
1	For orchestral music
2	For chamber music or an instrumental solo
3	For operas or musicals
4	For church music or the pipe organ
5	For jazz
6	For disco music
7	For a live concert in an open-air stadium
8	For music programs on video tapes or laser discs
9	For movie programs on video tapes or laser discs
10	For Dolby surround encoded video programs

Making Most of the Digital Sound Effects

Before making most of the digital sound effects

Although ten sound field programs (recommended combinations of each settings) are already preset for easy use (refer to the previous page), you can also manipulate various parameters to finely tune the factory-preset settings to your room, or create orginal sound effects as you like.
To understand the digital sound effects, use the demonstration mode incorporated in the unit.

Table of Adjustable Parameters

		HALL 1	HALL 2	OPERA	CHURCH	JAZZ CLUB	DISCO	STADIUM	LIVE CONCERT	THEATER	DOLBY SURROUND
Equalizer		•	•	•	•	•	•	•	•	•	•
DDS		•	•	•	•	•	•	•	•	•	
Main	Room Size	•	•	•	•	•	•	•	•	•	
	Wall	•	•	•	•	•	•	•	•	•	
	Seat Position Front-Rear	•	•	•	•	•	•	•	•	•	
	Seat Position Left-Right	•	•	•	•	•	•	•			
	Effect level	•	•	•	•	•	•	•	•	•	
	Reverb Time	•	•	•	•			•	•		
	Delay Time*										•
Sub	Rear Level*	•	•	•	•	•	•	•	•	•	•
	Center Level*								•	•	•
	Input balance*										•

*Refer to pages 27 to 29 for ajusting these parameters.

Note
The digital sound effects (the surround, parametric equalizer, and digital dynamic sound controller) cannot be obtained with the program source connected to the TAPE 2 MONITOR.

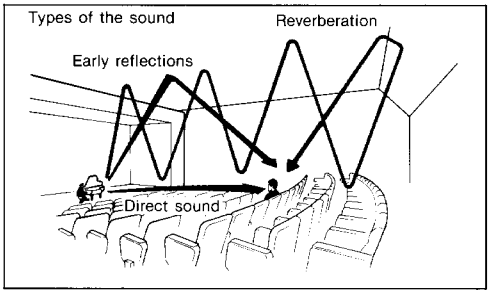
To start the demonstration mode

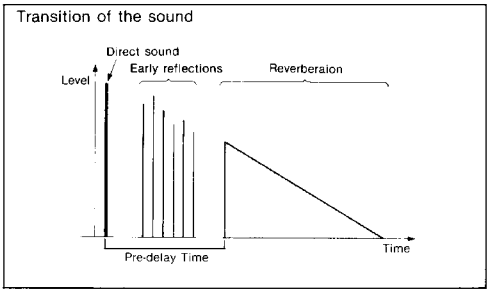
While pressing MUTING, press AUTO INPUT BAL.
The demonstration mode will illustrate how to use each parameter.

Understanding the Digital Surround Processor

The sound heard in a place such as a concert hall or a movie theater consists of direct sound, and early reflected sound (early reflections) and a reverberative sound(reverberation). The acoustics of the room affect the way these three sounds are heard. We can estimate the size or the type of a hall by listening to and differentiating these three kinds of sound.
The STR-D2020 reproduces the early reflections and the reverberation using its digital signal processor and allows you to design a variety of sound field in your own room. The unit incorporates 10 types of surround modes, and within each mode, you can adjust several parameters to maximize the effect in your listening room.

Note
Each surround mode has several internal (fixed) parameters in addition to the adjustable parameters explained in this section. Therefore, surround modes will not become the same even if you set all adjustable parameters the same.



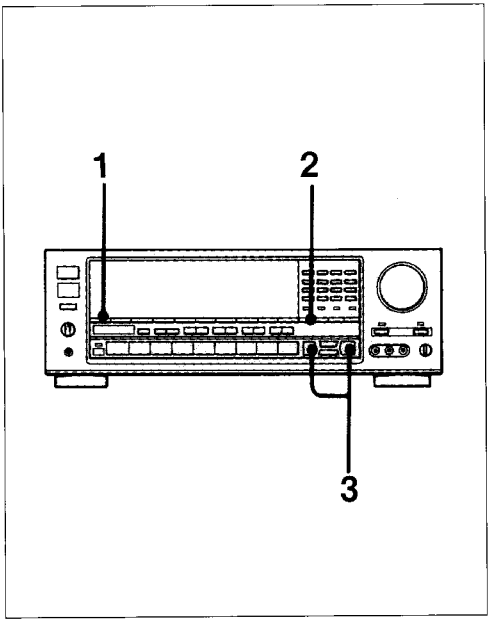


Characteristics of the Surround Modes

Surround mode	Characteristics	Appropriate music source
HALL 1	Reproduces the acoustics of a rectangular concert hall with soft sound. It is effective for playing a program source with hard sound.	Solo or medium-size orchestra
HALL 2	Reproduces the acoustics of a vineyard type concert hall with a large early reflection effect. HALL 2 simulates a larger hall than HALL 1 with walls made of wood and stone. Bright sounds are reproduced.	Large-size concert play such as the orchestra
OPERA	Reproduces the acoustics of an opera house, keeping the clearness of the vocal music.	Opera
CHURCH	Reproduces the acoustics of a church made of wood.	Baroque music, string orchestra or choral group
JAZZ CLUB	Reproduces the acoustics of a live house. The equalizer boosts high frequencies, adding sharpness to sounds.	Jazz
DISCO	The equalizer boosts high and low frequencies, and the dynamic sounds are reproduced.	Pops
STADIUM	Reproduces the acoustics of an outdoor stadium with a long pre-delay time. It is effective for playing a program source recorded in a stadium.	Pops
LIVE CONCERT	Adds the reflection of a large concert hall to decoded signals of the Dolby prologic decoder.	Dolby surround processed music software
THEATER	Adds the reflection of a theater to decoded signals of the Dolby prologic decoder.	Dolby surround processed movie software
DOLBY SURROUND	Decodes programs processed with the Dolby surround.	Dolby surround processed software

Adjusting the Main Parameters

Before adjusting parameters, play back the program source. You can adjust parameters while listening to the actual sound.



1 **Press SURROUND ON/OFF to ON.***

2 **Press PARAMETER MAIN until the desired parameter appears in the display.** (Once you press MAIN, you can select the desired parameter by pressing △or ▽.)

3 **Adjust the parameter by pressing ◁ or ▷.**

Tips for adjusting the main parameters
The following procedure allows you to make the desired sound field more effectively.

1 Select the desired factory-preset sound field program.

2 Adjust the Effect Level.

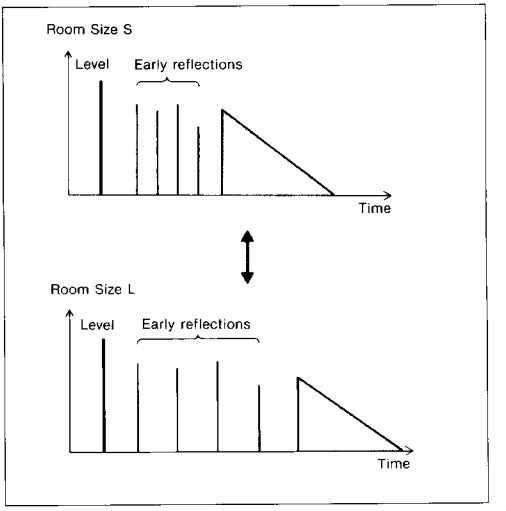
3 Adjust the Reverberation time.

4 Adjust other parameters, if necessary.

Note
*If the surround function is not turned on, "surround off!" appears after you finish adjusting parameters.

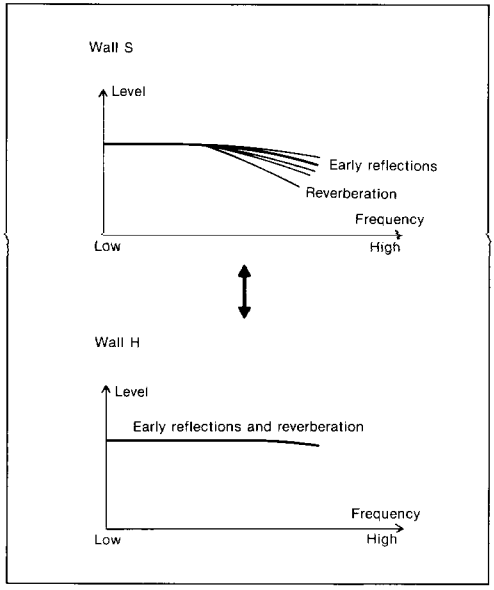
Simulating the Room Size

The sound emitted from a sound source is reflected many times between the left and right walls, ceiling, and floor before it reaches our ears. In a large room, the sound takes more time to bounce from one surface to another than in a smaller room.
The ROOM parameter controls the spacing of early reflections to simulate the room size. The S indicator in the display signifies a small room, the L indicator signifies a large room, and the middle point designates the standard room size.



Simulating the Wall Material

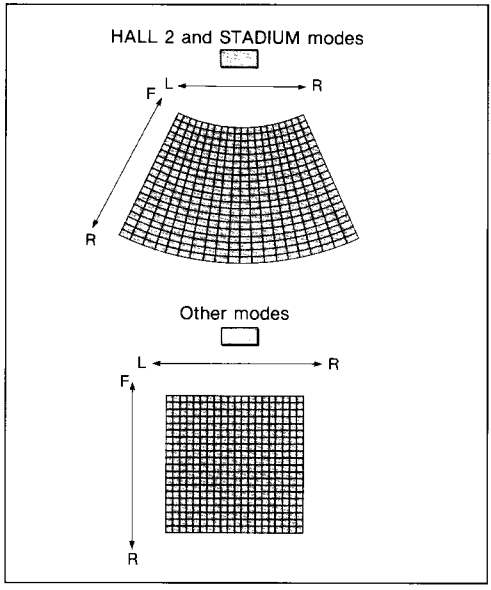
When sound is reflected by a wall made of soft material such as wood or a wall covered with a curtain, the high frequency components are reduced. A hard wall is highly reflective and does not significantly effect the frequency response of the reflected sound.
The WALL parameter controls the level of high frequencies to simulate the wall material. The S indicator in the display signifies a soft wall, the H indicator signifies a hard wall, the middle point designates the standard wall made of wood.



Simulating the Seat Position

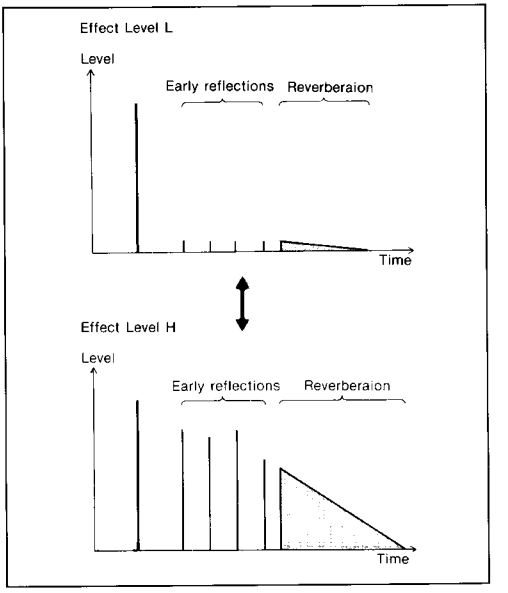
When you sit in the front of a room, you will hear more direct sound from the front speakers, and the component of reflected sounds from the front speakers grows as you move to the rear. Similarly, the component of reflected sound changes when you move from left to right, and vice versa. The F/R and L/R parameters control the balance of the direct and reflected sound and other components of sound to simulate your listening position.
When adjusting the F/R parameter, the F indicator in the display signifies the front position of the room, the R indicator signifies the rear position, the middle point of the indicator designates the center position. When adjusting the L/R parameter, the L indicator signifies the left position of the room, the R indicator signifies the right position, and the middle point of the indicator designates the center position.

Note
You cannot adjust the L/R parameter in the LIVE CONCERT and THEATER mode.



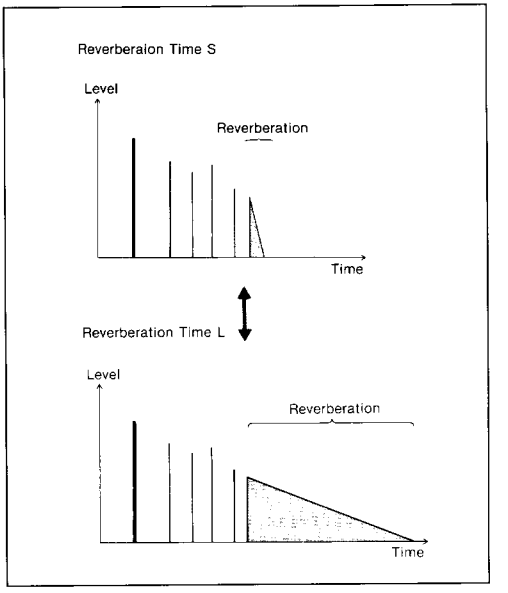
Adjusting the Effect Level

Effect level is the combination of the level of early reflecions and reverberation. The L indicator in the display signifies the lowest level, and the H indicator signifies the highest level. The adjustable level is divided into 20 segments. As you select higher level, the room becomes more "live", and as you select lower level, the room becomes "dead".



Adjusting the Reverberation Time

This parameter adjusts the length of the reverberation—the time requied for reverberative sound to decrease to −60 dB. The S indicator in the display signifies the shortest reverberation time, the L indicator signifies the longest reverberation time.



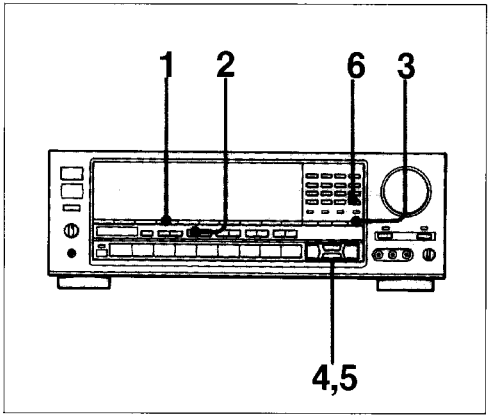
Using the Digital Parametric Equalizer

Understanding the Digital Parametric Equalizer

The parametric equalizer is a tone control system with adjustable center frequency and slope(Q). The STR-D2020 provides flexible equalization using one-band parametric equalizer with center frequency and slope, and 2-band shelving equalizers with adjustable turnover points.
The equalization curve appearing in the display window allows you to accurately adjust the sound quality. The parametric equalizer effects all line output signals including SURROUND (REAR), CENTER.

Adjusting the Digital Parametric Equalizer

Before adjusting the digital parametric equalizer, play back the program source. You can adjust the equalizer while listening to the actual sound.



1 **Press EQUALIZER ON/OFF to ON.***

2 **Press DISPLAY GRAPH until the equlization curve appears in the display.**

3 **Press EQUALIZER BAND to select a frequency band.**
B: Bass
M: Middle
T: Treble

4 **Press ◁ or ▷ to select the frequency you want to adjust.**

5 **Press △ or ▽ to raise or lower the level of the selected frequency.**

6 **Press SLOPE to select the slope if necessary.**

7 **Repeat steps 4 through 6 for other frequency bands until you obtain the desired equalization curve.**
To restore the real time analyzer or peak hold mode, press DISPLAY GRAPH.

Spectrum analyzer display
Every time you press DISPLAY GRAPH, the display of equalizer curve, real time analyzer and peak hold is cyclically switched.

—Equalizer curve shows the settings of the equalizer controls.
—Real time analyzer (RTA type-1) shows the level of each frequency range.
—Peak hold mode (RTA type-2) holds the highest input of each frequency range for several seconds.
—Real time analyzer (RTA type-3) shows the highest level of each frequency range.

To make the equalization curve flat
Press FLAT.
You can create a new equalization curve.

Note
*If EQUALIZER ON/OFF is set to OFF, "equalizer off!" appears after you finish adjusting the parameter.

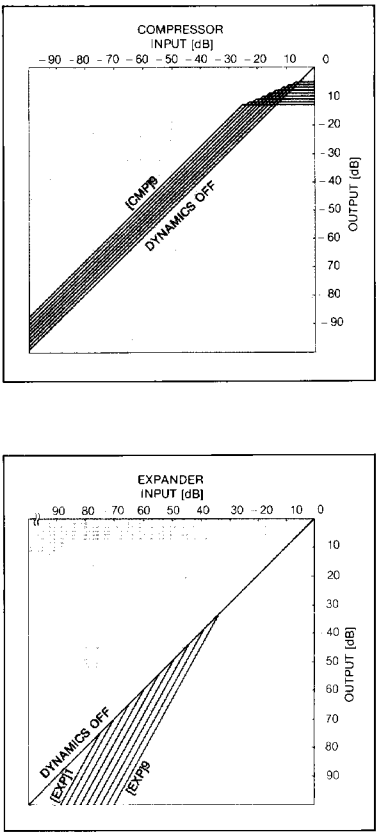
When the center frequency band overlaps the bass or treble frequency band during adjustment
The setting level of each band will accumulate.
The equalization curve appears only between +/−12 dB.

Using the Digital Dynamic Sound (DDS) Controller

Understanding the Digital Dynamic Sound Contoller

The STR-D2020 allows you to select either of two digital dynamic sound contols, compressor or expander. The compressor compresses the dynamic range of the output signal to increase the average output level without distortion. This function is useful for obtaining dynamic sound at small output levels or when recording a program source with a wide dynamic range, such as a compact disc, on a cassette tape. On the other hand, the expander limits the dynamic range of the input signal to eliminate undesired noise.
You can set the compressor or expander effect in 9 increments.

Input/output characteristics of compressor and expander

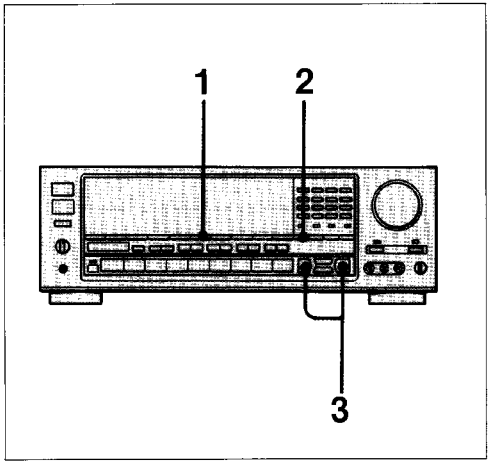


Adjusting the Digital Dynamic Sound Controller

Before adjusting the digital dynamic sound controller, play back the program source.
You can adjust the contraller while listening to the actual sound.

IMPORTANT

You cannot operate the digital dynamic sound (DDS) controller when the DOLBY SURROUND mode is selected. If you select DOLBY SURROUND with SURROUND ON/OFF set to ON, the digital dynamic sound (DDS) controller is automatically turned off. To turn on the DDS controller, select another mode.



1 **Press DDS ON/OFF to ON.**

2 **Press PARAMETER MAIN until "DDS" appears in the display.**

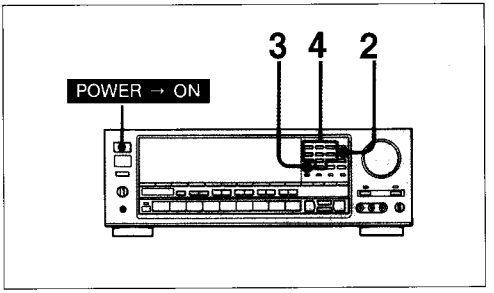
3 **Press ◁ or ▷ to adjust the compressor or expander.**

Note
If DDS ON/OFF is set to OFF, "DDS off!" appears after you finish adjusting.

Storing the Settings of Digital Sound Effects - Sound Field Memory

Storing the Settings of Digital Sound Effects

You can store up to 10 digital sound effects (combinations of the settings of surround, parametric equalizer, and digital dynamic sound) you created into the memory and recall them.
You can also link these 10 digital sound field effects to preset stations.



1 **Set the parameters of surround, parametric equalizer, and digital dynamic sound controller.**

2 **Press RECALL button (when the unit is in a mode other than TUNER, skip this step).**

3 **Press MEMORY.**

4 **Press the numeric button to be stored (1 to 0).**

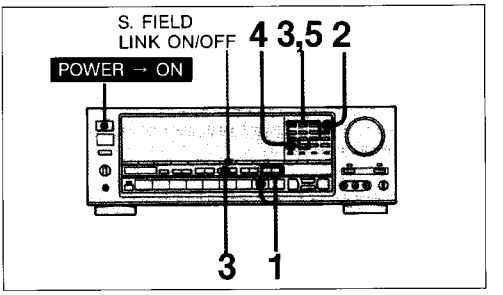
Calling up the settings of digital sound effects
1 Press PRESET/USER until USER appears in the display.
2 Select the desired preset number by pressing the numeric button. To use the numeric buttons in tuner mode, first press RECALL button.

When you store a new digital sound effect
The digital sound effect for the same user preset number will be replaced.

Even if the AC power cord is disconnected
The stored data is maintained for approximately 2 weeks.

To reset the unit to initial settings
Press POWER while pressing SURROUND ON/OFF.
If the DRLC/POWER indicator is lit, first press DRLC/POWER to turn off this indicator.
All of the 10 settings are then restored to the ones stored at the factory.

Linking the Sound Field Memory to Preset Stations



1 **Tune in a station to be linked to the sound field effect.**

2 **Press SOUND FIELD PGM SET.**

3 **Press USER/PRESET and the numeric buttons (1 to 0) to select the desired sound field effect.**

4 **Press MEMORY.**

5 **Press the numeric button corresponding to the station number to be linked.**

Tuning in the preset station stored with the linked sound field effect
1 Press S FIELD LINK ON/OFF so that SOUND FIELD LINK ON appears in the display.
2 Select the desired number by pressing the SHIFT and numeric button.

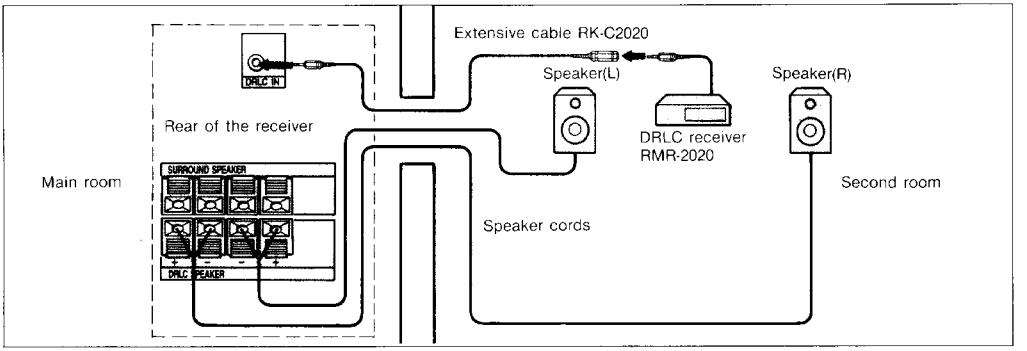
To change the sound field setting
Press S FIELD LINK ON/OFF to OFF, and then adjust the sound field effect as you desire.

Enjoying Sound in Another Room

Overview

The Dual Room Link Control allows you to link a second room to your main or primary listening room. When the RM-S2020K Dual Room Link Control Kit (optional) and optional speakers are properly connected to your audio system and they are placed in the second room, either the same program source being played in the main room or a different program source can be heard in the second room.

Connections



Operation

1 Press DRLC/POWER. (The POWER switch on the main unit does not need to be turned on.)

2 To listen to CD or tape in the second room, set the CD player or tape deck into the play mode.

3 Control the system with the remote commander RM-S2020K for the second room.

The following examples illustrate program source options for the main and second room.

Listening in the main room	Listening in the second room
CD	FM broadcast
Tape	CD
Sound from TV	Same sound from TV
Off	FM broadcast
Sound from video source (with surround effect)	Second room system defeated
FM broadcast	Off

Note

- The surround system is used in the main room and the DRLC function cannot be operated simultaneously.
- You cannot use the following functions from the second room.
  - — Surround effect
  - — Equalizer control
  - — DDS control
  - — Muting
  - — TAPE 2 MONITOR

Please refer to the operating instructions of RM-S2020K for details.

Specifications

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 8-ohm load, both channels driven, from 20 - 20,000 Hz, rated 130 watts per channel minimum RMS power, with no more than 0.008 % total harmonic distortion from 250 miliwatts to rated output.

Other Specifications

Amplifier section

Dynamic power output	8 ohms, at 1 kHz 1HF	195 + 195 watts
	4 ohms, at 1 kHz 1HF	250 + 250 watts
Power output of surround amplifier (8 ohms, at 1 kHz)		15 + 15 watts
Harmonic distortion at rated ouput		Less than 0.008%
Intermodulation (IM) distortion at rated output		Less than 0.008%
Frequency response	PHONO RIAA qualization curve	+0.5 dB
	CD, DAT, TAPE 1/2, DIGITAL (OPTICAL/ COAXIAL) VIDEO 1, 2, 3	5 Hz -20 kHz ±0.5 dB
Residual noise		Less than 70 μV
Damping factor (8 ohms, at 1 kHz)		50
Input sensitivity/ impedance	PHONO MM	3 mV, 50 kilohms
	DAT, CD VIDEO 1, 2, 3 TAPE 1, 2	200 mV, 50 kilohms
	DIGITAL (COAXIAL)	0.5 Vp-p, ±20%, 75 ohms
	DIGITAL (OPTICAL)	TOSLINK
Output sensitivity/ impedance	DAT OUT TAPE OUT 1,2 VIDEO 1	200 mV, 10 kilohms
	SPEAKERS	Accepts speakers of 8 - 16 ohms
	HEADPHONES	Accepts headphones of high and low impedance
MUTING		-20 dB

Digital signal processor section

Modulation (A/D conversion)		High Density Linear Converter
Demodulation (D/A conversion)		High Density Linear Converter System (Pulse D/A Converter)
Sampling frequency		32 kHz, 44.1 kHz, 48 kHz
Equalizer	Band	3-band, Bass/Treble/Mid
	Turnover frequency	Bass: 99 Hz - 1 kHz Treble: 1 kHz - 10 kHz
	Center frequency	Mid: 20 Hz - 18 kHz
	Level	±12 dB, 0.2 dB step
	Slope (Q)	3-step selectable, Wide, Mid, Narrow
DDS	Compressor Expander	9-step adjustable 9-step adjustable
Surround	Main parameter ROOM SIZE WALL SEAT POSITION F-R SEAT POSITION L-R EFFECT LEVEL REVERB TIME DELAY TIME	 20-step adjustable 20-step adjustable 20-step adjustable 20-step adjustable 20-step adjustable 20-step adjustable 15.0 ms-30.0 ms, 0.1 ms step
	Sub parameter REAR LEVEL CENTER LEVEL INPUT BALANCE	 0 - -60 dB, -∞, 1 dB step 0 - -60 dB, -∞, 1 dB step Auto/Manual

Video section

Inputs	VIDEO 1, 2, 3: 1 Vp-p 75 ohms
Outputs	VIDEO 1, MONITOR: 1 Vp-p 75 ohms

FM tuner section

Frequency range		87.5 - 108.0 MHz
Antenna terminals		75 ohms coaxial
Sensitivity at 50 dB		18.3 dBf, 45 μV (mono) 38.3 dBf, 45 μV (stereo)
Usable sensitivity		11.2 dBf, 2 μV (IHF)
S/N	Mono	84 dB
	Stereo	78 dB
Harmonic distortion at 1 kHz	Mono	0.2 %
	Stereo	0.4 %
IM distortion	Mono	0.2 %
	Stereo	0.4 %
Separation		45 dB at 1 kHz
Frequency response		30 Hz - 15 kHz $^{+0}_{-1.5}$ dB
Selectivity		65 dB at 300 kHz
Capture ratio		1.2 dB
AM suppression ratio		60 dB
Image response ratio		80 dB
IF response ratio		90 dB
Spurious response ratio		100 dB
RF intermodulation at 800 kHz		65 dB
Auto tuning threshold	Low	30 dBf
	High	50 dBf

AM tuning section

Frequency range	530-1710 kHz (with 10 kHz interval) 531-1710 kHz (with 9 kHz interval)
Antenna	Loop antenna
Usable sensitivity	50 dB/m (at 1,000 kHz or 999 kHz)
S/N	54 dB (at 50 mV/m)
Harmonic distortion	0.5 % (50 mV/m, 400 Hz)
Selectivity	35 dB (9 kHz), 40 dB (10 kHz)
Auto tuning threshold	55 dB/m

General

System	Tuner section	PLL quartz-locked digital synthesizer system
	Preamplifier section	Low-noise NF type equalizer
	Power amplifier section	Pure-complimentary SEPP
Power requirements		120 V AC, 60 Hz
Power consumption		USA model: 250 watts Canada model: 550 VA (5 watts at standby condition)
AC outlets		Two switched, total 100 watts
Dimensions		430 × 148 × 372 mm (17 × 5⅞ × 14¾ inches)
Weight		12.1 kg (26 lb 11 oz)

Supplied accessories

FM ribbon antenna (1)
AM loop antenna (1)
Programmable commander RM-P301 (1)
External antenna connetor (1)
Sony Batteries SUM-3 (NS) (2)

Design and specifications subject to change without notice.

Troubleshooting Guide

Before proceeding through the check list below, examine the connections and the procedures outlined in the manual. Should any problem persist after you have checked the following items, consult you nearest Sony dealer.

Radio Broadcast Reception

Problem	Cause	Solution
No FM station can be located by Auto-Tuning operation.	The signal strength of the station is too weak.	Press TUN/CHARA and ▽ to set the receiving signal level low.
The STEREO indicator flickers or does not appear when receiving stereo programs.	A very weak FM station or a noisy FM program is received.	Adjust the antenna or connect an external FM antenna.
		Press FM MODE to set to MONO mode.
No station can be tuned in by Auto-Tuning operation.	The AM tuning interval is set incorrectly.	Change the tuning interval according to the AM frequency allocation system of your country. (See page 5.)
	The signal strength of the stations is too weak for Auto-Tuning.	Adjust the antenna.
		Directly tune in the stations. (See page 18.)
No stations can be tuned in by Preset-Tuning.	No stations have been preset.	Preset the stations. (See page 20.)

Remote Commander

Problem	Cause	Solution
The remote commander will not operate.	The batteries are exhausted.	Replace the batteries with new ones.
	The commander head is not pointed toward the receiver.	Point the commander head toward the receiver.
	There is an object between the commander and the receiver.	Remove the object.
The commander signal cannot be programmed.	There is noise interference.	Place both remote commanders apart from the source of noise.
	The batteries are exhausted.	Replace the batteries with new ones.
The LEARN indicator goes off after flashing.	The internal memory capacity is full.	Clear all the signals and program again. (See page 15.)

Sound

Problem	Cause	Solution
No sound is heard even if the volume is adjusted.	The speaker or program source equipment is not connected correctly.	Connect the equipment correctly.
	The SPEAKERS selector is not set correctly.	Set the selector correctly.
	The TAPE 2 MONITOR button has been pressed for a program source other than tape deck 2. (The indicator is lit.)	Press the button to disengage.
	A wrong function selector has been pressed.	Check the display window, and press the correct function selector.
	The funtion switch on the VCR is not set correctly.	Check and set it correctly.
	"CENTER OFF" is selected in the Pro-logic mode.	Select the other modes. (See page 26.)
No sound or sound at very low level is heard from rear speakers.	SURROUND function is turned off.	Press SURROUND ON/OFF to turn on the function.
	Monaural program source is played back in Dolby surround mode.	Select other modes. (See page 32.)
Sound is heard only at a very low volume.	The MUTING button has been pressed. (The indicator is lit.)	Press the button to disengage.
One channel does not transmit audio, or the volume from the left and right speakers is unbalanced.	The BALANCE control is not set appropriately.	Adjust the BALANCE control.
	The speaker or program source is not connected correctly.	Check and properly connect the equipment.
There is an abrupt loss of sound from one or both of the speakers, and the PROTECTOR indicator flickers in the display window.	A short-circuit problem has activated the protective circuit.	Turn off the unit, eliminate the short-circuit problem and turn on the power again. If there is no short-circuit problem, consult your nearest Sony dealer.
Sound transmitted from the speakers is reversed.	The speakers are not connected correctly.	Connect the right speaker to the R SPEAKER terminals and the left speaker to the L SPEAKER terminals.
There is lack of bass sound or the instrument position is obscure.	The +/− connection of the speaker is reversed.	Connect the speaker with the correct phase.
Severe hum or noise is heard.	The connecting cords are not shielded type.	Use shielded type cords.
	A transformer, motor, TV or fluorescent light affects the connecting cords.	Place the connecting cords in a location away from a transformer or motor, and at least 3 meters (10 feet) from a TV set or a fluorescent light.
	The audio components are too close to a TV set.	If both are used at the same time, separate the TV from the audio components.
	The unit is not grounded.	Connect the ground wire to the antenna ground terminal.
	The connections are loose.	Make secure connections.
	The plugs and jacks are dirty.	Wipe the plugs and jacks with a cloth lightly dampened with alcohol.
Surround effect cannot be heard.	Surround circuit is turned off.	Press SURROUND ON/OFF to turn on the function.
Equalization curve adjustment is impossible.	The unit is in a wrong mode.	Press EQUALIZER BAND and DISPLAY GRAPH.
	Equalization circuit is turned off.	Press EQUALIZER ON/OFF to turn on the function.
Dynamic sound control effect cannot be heard.	Dynamic sound control circuit is turned off.	Press DDS ON/OFF to turn on the function.
	The DOLBY SURROUND mode is selected.	Select other surround modes. (See page 38.)